

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: **Andreas Knecht et al.**
Serial No: **10/578,527**
Filed: **5/8/2006**
Title: **Camshaft Adjusting Device**
Examiner: **Ching Chang**
Art Unit: **3748**

Commissioner for Patents
Alexandria, VA 22313-1450

AMENDMENT

In response to the office action dated 5/9/2008, please amend the instant application as follows:

IN THE CLAIMS:

The claims are amended as shown in the attached marked-up complete list of claims; new claims 21-25 are added.

claimed previously in claims 14 and 15. The feature in regard to the dwell position is disclosed on page 8, lines 2-7, and in the paragraph bridging pages 8 and 9.

The invention relates a camshaft adjuster system employing a control valve group that works as a 4/4-way valve system and the control valve group has only a first state, a second state, a third state, and a fourth state. The features of a 4/4-way valve are disclosed in the specification, page 4, lines 3-6: such a valve by definition has four defined operating states and interconnects four connections.

In contrast to this, the cited reference *US 6,408,807* discloses a pressure controlling valve that has a total of seven states: Figs. 5 through 11 illustrate the various states; moreover, the seven states of the valve are described in detail in col. 11, line 1 to col. 12, line 52, of *US 6,408,807*. The disclosed pressure controlling valve therefore is not a control valve group that works as a 4/4-way valve system and does not have only a first, second, third and fourth state.

Claim 11 moreover sets forth that the dwell position of the camshaft adjusting system is selected automatically and independently of the process of switching off the internal combustion engine. According to the present invention, the camshaft adjusting device is held, moved and set by means of the valve. The camshaft adjusting device in cooperation with the camshaft provides a system selected according to positions of equilibrium. When the camshaft adjusting device is switched pressureless, the camshaft automatically drives the rotor of the camshaft adjusting device into a defined dwell position and this dwell position is the result of equilibrium conditions and supports of the system.

In contrast to this, the cited reference discloses a complicated procedure for achieving such a dwell position; see col. 12, line 53, to col. 13, line 12. Note that the position of Fig. 5 is the duty value = 0 % and de-energized condition (col. 11, lines 1-3).

Therefore, claim 11 is not anticipated by the cited reference *US 6,408,807* and also not obvious. In particular, claim 12 specifically claiming a 4/4-way valve is not anticipated or obvious.

In regard to *US 6,684,835* it is respectfully submitted that as shown in Figs. 1 and 2, the valve has five connectors (see col. 9, lines 42-59): a first path 77 for oil

supply/discharge; a second path 78 for oil supply/discharge; an advance angle path 72; a release path 73; a retard angle path 71; and an exhaust passage 75c. This is not a control valve group with a 4/4-way valve function having only four states.

Moreover, there is no disclosure in regard to the dwell position being selected automatically and independently of the process of switching off the internal combustion engine as claimed in the instant application. The complex process of switching off the engine and reaching the "intermediate phase" is described in col. 13, lines 6 to 33, of the cited reference.

Therefore, claim 11 is not anticipated by the cited reference US 6,684,835 and also not obvious. In particular, claim 12 specifically claiming a 4/4-way valve is not anticipated or obvious.

Reconsideration and withdrawal of the rejections under 35 USC 102 are respectfully requested.

NEW CLAIMS 21-25

The subject matter of new claims 21-25 is disclosed in the specification as follows.

- Claim 21: page 9, lines 3-5
- Claim 22: page 8, lines 24-27
- Claim 23: page 8, lines 2-7
- Claim 24: page 5, lines 9-12
- Claim 25: page 5, lines 14-17; page 13, lines 14-28

The cited references do not show that the first state is produced by a reset and start process of an engine control unit. They also do not show that, in case of a failure, the camshaft adjusting system enters into a fail-safe state that is equivalent to an operating end time state of the camshaft adjusting system. The references also do not disclose that the dwell position is achieved by equilibrium of the camshaft or that the dwell position is reached passively. A check valve that is active for the normal operating phases is also not shown.

CONCLUSION

In view of the foregoing, it is submitted that this application is now in condition for allowance and such allowance is respectfully solicited.

Should the Examiner have any further objections or suggestions, the undersigned would appreciate a phone call or e-mail from the examiner to discuss appropriate amendments to place the application into condition for allowance.

Authorization is herewith given to charge any fees or any shortages in any fees required during prosecution of this application and not paid by other means to Patent and Trademark Office deposit account 50-1199.

Respectfully submitted on September 9, 2008,

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